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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,359	12/30/2000	Gary Cao	042390P9473	8440

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EXAMINER

RAO, SHRINIVAS H

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/752,359

Applicant(s)

CAO ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants' amendment filed prior to April 08, 2005 was received by the Office on April 08, 2005 as per the date stamp on the post card . However the amendment was not entered in the E-Dan and the examiner called Mr. George Chen (25,129) on July 21, 2005 enquiring whether the Applicants' have abandoned this Application. Mr. Chen on July 21, 2005 faxed a copy of the amendment filed before April 08, 2005 along with the post card proof of the receipt of the same by the Office .

The copy of the amendment faxed on July 21, 2005 was entered and forwarded to the Examiner on July 25, 2005.

Therefore claim 1 as amended by the amendment and claims 2-11 as previously filed are currently pending in the Application.

Claims 12-16 have been cancelled.

Information Disclosure Statement

No IDS to date has been filed in this case.

Claim Rejections - 35 USC Section 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not

be negated by the manner in which the invention was made.

A. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satya et al. (U.S. Patent No. 6,528,818, herein after Satya) in view of Browning et al. (U.S. Patent No. 5,580,829 herein after Browning).

With respect to claim 1 Satya describes a structure comprising: a first set of features disposed in a scribe line, (Satya abstract line 2-4, Satya col. 37 lines 28 to 30) said first set of features being a subset of product features, (Satya figure 27, etc.) and , a second set of features disposed in said scribe line and merged directly into said first set of features, (Satya abstract lines 6-8, Satya col. 37 lines 28 to 30) .

Satya does not specifically mention or describe the second set of features occupying a smaller area than the first set.

However Browning in figure 4 and col. 4lines 40-52 describes the second set of features occupying a smaller area than the first set (i.e. first set is larger oversize by about 10% to reduce the amount of extra metallic material deposited on dice such that bowing is eliminated and human error is virtually eliminated by creating the second mask key . (Browning col.2 lines 35-40).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Browning's second set occupying a smaller

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area than said first set, in Satya's device to reduce the amount of extra metallic material deposited on dice such that bowing is eliminated and human error is virtually eliminated by creating the second mask key . (Browning col.2 lines 35-40).

The remaining limitations of claim 1 are :

second set being similar to said first set, (Browning figures2,3, etc.) said second set being distinguishable from surrounding structures by pattern recognition and evaluation of contrast, density, tone and grey scale in an image . (Satya Abstract last two lines).

With respect to claim 2 Satya describes the structure of claim 1 wherein critical dimension (CD) is measured on said first set of features. (Stay figure 2, col. 8 lines 1 5-22).

With respect to claim 3 Satya describes the structure of claim 1 wherein said first set of features and said second set of features differ in spaces between features. (Staya figure 4D # 216 and 214)

With respect to claim 4 describes the structure of claim 1 wherein said first set of features and said second set of features differ in line widths of features. (Staya figure 4 D).

With respect to claim 5 describes the structure of claim 1 wherein said first set of features and said second set of features have the same pitch for features. (Satya figure 4C).

B. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable

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over Satya et al. (U.S. Patent No. 6,528,818, herein after Satya) in view of Browning et al. (U.S. Patent No. 5,580,829 herein after Browning) as applied to claims 1-5 above and further in view of Gallarada et al. (U.S. Patent No. 6,539,106 herein after Gallarada).

With respect to claim 6 Satya and Browning describe the structure of claim 1.

However Satya and Browning do not describe wherein said first set of features comprises a first array of holes.

However, Gallarada in figure 4, col. 6 lines 36 to 48 describes wherein said first set of features comprises a first array of holes to identify defects of electrical significance, such as missing or incompletely formed contact holes and provide methods for inspection by matching of features between the images.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include Gallarada's teachings of first set of features comprises a first array of holes, in Satya' and Browning's first/second set of features. The motivation to make the above substitution is to to identify defects of electrical significance, such as missing or incompletely formed contact holes and provide methods for inspection by matching of features between the images. (Gallarada col. 6 lines 40-47).

With respect to claim 7 describes the structure of claim 6 wherein said first array of holes comprises a 5 by-5 square array of holes. (Gallarda figure 5).

With respect to claim 8 describes the structure of claim 6 wherein said second set of features comprises a second array of holes. (Gallarda figure 5).

With respect to claim 9 describes the structure of claim 8 wherein said

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second array of holes differs from said first array of holes in size of array. (Gallarda figure 5 #536 compared with other structures 526-534).

With respect to claim 10 describes the structure of claim 8 wherein said second array of holes differs from said first array of holes in space between holes. (Gallarda figures 18 A and E)

With respect to claim 11 describes the structure of claim 8 wherein said second array of holes differs from said first array of holes in line widths of holes.. (Staya figure 4 D).

Response to Arguments

Applicant's arguments filed 07/21/2005 have been fully considered but they are not persuasive for the following reasons :

Applicants' first contention is that the Applied Satya does not disclose/teach the test structure as located within a scribe line.

The first contention is not consummate in scope with the presently recited claims (1, etc.) because Applicants' by the present amendment have specifically cancelled the recitation entirely within (from the ' features disposed entirely within a scribe line) and the claim now reads features disposed in a scribe line which recitation giving the broadest reasonable interpretation (Applicants' are reminded that current U.S. practice requires , that Claims be given their broadest reasonable interpretation . In re Pearson, 181 USPQ 641 (CCPA 1974). does not exclude features partially in a scribe line.

If Applicants' want the entire feature to be within the scribe line as their argument suggests the same should be clearly/unambiguously recited.

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However, assuming arguendo Applicants' claim recitations are commensurate in scope with their arguments, contrary to Applicants' contention the Applied Satya reference in col. 37 lines 28 to 30 states :

Additionally, the above described test structures may be formed on any suitable portion of the wafer, such as within the scribe line or on any portion of one or more dice. . . .

Therefore contrary to Applicants' arguments the applied primary reference does teach the test structures including a plurality of dies within the scribe lines .

Further ,it is well settled law that that argued subject matter must be recited in the claims .

In response to Applicants' arguments that Satya does not include certain features of Applicants' invention, one limitation (test structure located entirely within said scribe line is taught by the applied primary reference) the limitation on which the Applicant relies (i.e. entirely within the scribe lines) is not stated in the claims as presently recited. It is the claims that define the invention, and it is claims not specifications that are anticipated or unpatentable. *Constant V Advanced Micro-Devices Inc.*, 7 USPQ 2d 1064.

Applicants' second contention that the Examiner has mischaracterized the applied Gallarda reference is not understood because the Examiner applied the Gallarada reference to show the teaching of the second set of features occupying a smaller area than the first set. (as stated in the last Office Action page 4 , starting 5 th full paragraph) and Applicants' contend that Gallarda's structure is not located entirely within the scribe line (It is noted that as stated above the applied primary reference Satya discloses/teaches test structures

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located entirely within the scribe line and therefore it is not necessary for the applied secondary reference to also include teachings /suggestions taught by the primary reference).

Applicants' cannot ignore the teachings of the references in trying to arrive at contrary conclusions.

As stated as the presently recited limitations of claim 1 are taught by the applied references and therefore not persuasive.

Therefore all of Applicants' arguments are not persuasive and pending claim 1 and dependent claims 2-11 are finally rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

The Group facsimile number is (703) 308-7724.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven H. Rao

Patent Examiner

September 21, 2005.



LONG PHAM
PRIMARY EXAMINER